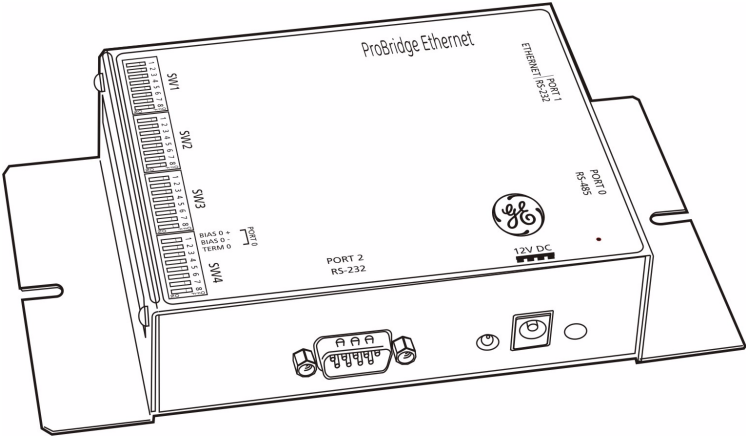


ProBridge Ethernet User Manual



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Intended use Use this product only for the purpose it was designed for; refer to the data sheet and user documentation. For the latest product information, contact your local supplier or visit us online at www.gesecurity.com.

FCC compliance This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications.

You are cautioned that any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

Regulatory



Operation of this equipment in a residential area may cause interference, in which case the user is required to take all measures that are necessary, at the user's expense, to correct the interference

Contents

Introduction	1
Conventions used in this document	2
Safety terms and symbols	2
Overview	3
Compatibility	3
Disclaimer	3
Product contents	4
Other required equipment	4
Installation environment	5
Power specifications	5
Installation	7
PBe components	7
Typical system layout	8
Installation overview	9
Required information	9
Required DIP switch information	10
Installation steps	10
Programming	12
HyperTerminal configuration	12
Manual DIP switch configuration	18
DIP switch settings	20
SW1 switches 1 to 4	20
SW1 switches 5 to 8	21
SW3 switches 1 to 8	22
SW4 switches 7 and 8	22
Accessing the Webserver	23
Troubleshooting	25
Technical specifications	26
PBe	26
Cable Specifications	27
Contacting technical support	30
Online publication library	30

Introduction

This is the *GE ProBridge Ethernet User Manual* for model PBe. This document includes detailed instructions explaining:

- how to setup and install the PBe ProBridge and
- how to connect to single or multiple ATM sites.

There is also information describing how to contact technical support if you have questions. To use this document effectively, you should meet the following minimum qualifications:

- a basic knowledge of CCTV systems and components; and
- a basic knowledge of electrical wiring and low-voltage electrical connections.

Read these instructions and all ancillary documentation entirely before installing or operating this product.

Note: A qualified service person, complying with all applicable codes, should perform whatever hardware installation is required.

Conventions used in this document

The following conventions are used in this document:

Bold	Menu items and buttons.
<i>Italic</i>	Emphasis of an instruction or point; special terms. File names, path names, windows, panes, tabs, fields, variables, and other GUI elements. Titles of books and various documents.
<i>Blue italic</i>	(Electronic version.) Hyperlinks to cross-references, related topics, and URL addresses.
Monospace	Text that displays on the computer screen. Programming or coding sequences.

Safety terms and symbols

These terms may appear in this manual:



CAUTION: *Cautions* identify conditions or practices that may result in damage to the equipment or other property.



WARNING: *Warnings* identify conditions or practices that could result in equipment damage or serious personal injury.

Overview

The PBe is a specific ProBridge unit for interfacing the DVR family of digital video multiplex/recorders to financial institution automated teller machines (ATMs). The PBe supports Ethernet network communications.

Note: The PBe operates in an NTSC environment (120 VAC/60 Hz) or a PAL environment (220 VAC/50 Hz) provided the correct unit is ordered.

Compatibility

The PBe is compatible with all of the following DVR products:

- DVMRe, version 3.07 and above.
- DVMR-eZ, version 3.20 and above.
- Triplex, version 4.00 and above.
- Triplex-eZ, version 4.03 and above.
- WaveReader, version 3.6 and above.

Disclaimer

The PBe components identified within this document provide means of capturing transaction data for use by the DVR family of digital video recording/transmission products. The PBe components translate the data into a usable format by the DVR and permits associating transaction data with specific cameras. GE assumes no responsibility for the amount and type of information available, the operation, non-operation, or erroneous operation of these third-party transaction products.

Product contents

The PBe system consists of the ProBridge unit, this manual, an Ethernet cable, a PBe to DVR cable, a PBe to PC cable, and a power supply, as shown in *Figure 1*.

Figure 1. Product contents



Inspect the package and contents for visible damage. If any components are damaged or missing, do not use the unit; contact the supplier immediately. If you need to return the unit, you must ship it in the original box.

Other required equipment

You might also need the following:

- A PC to program the PBe.

Installation environment

Power. Ensure that the installation site's AC power is stable and within the rated voltage of the external power supply. If the site's AC power is likely to have spikes or DIPS, use power line conditioning or an uninterruptible power supply.

Temperature. Observe the unit's ambient temperature specifications when choosing a location for the unit. Extremes of heat or cold beyond the specified operating temperature limits may cause the unit to fail. Do not install this unit on top of other hot equipment.

Moisture. Do not expose the unit to rain or moisture. Moisture can damage internal components. Do not install this unit near sources of water.

RS-232 limitations. Cable length between the POS device and the PBe is limited to 50 ft. (15.24 m) Cable length between the PBe unit and the DVR is also limited to 50 ft. (15.24 m). If the supplied cables are replaced by custom made cables to address distances between components, ensure the cable is manufactured to ANSI standards for RS-232 communication.

Power specifications

The PBe is furnished with a power supply (110 or 240 VAC). Do not use any other power supply with this product. The manufacturer accepts no responsibility for damage caused by the use of any other power supply.

Make sure installation is complete and all connections are made before applying power to the unit.

4310-0007 120 VAC power supply

Power supply input

- Voltage: 120 VAC
- Tolerance: $\pm 10\%$
- Frequency: 60 Hz

Power supply output

- Voltage: 12 VDC
- Current: 110 mA
- Power: 1.3 watts
- Connector: 2.1 mm female barrel. Center positive.

4310-0008 220VAC power supply

Power supply input

- Voltage: 220 VAC
- Tolerance: $\pm 10\%$
- Frequency: 50 Hz

Power supply output

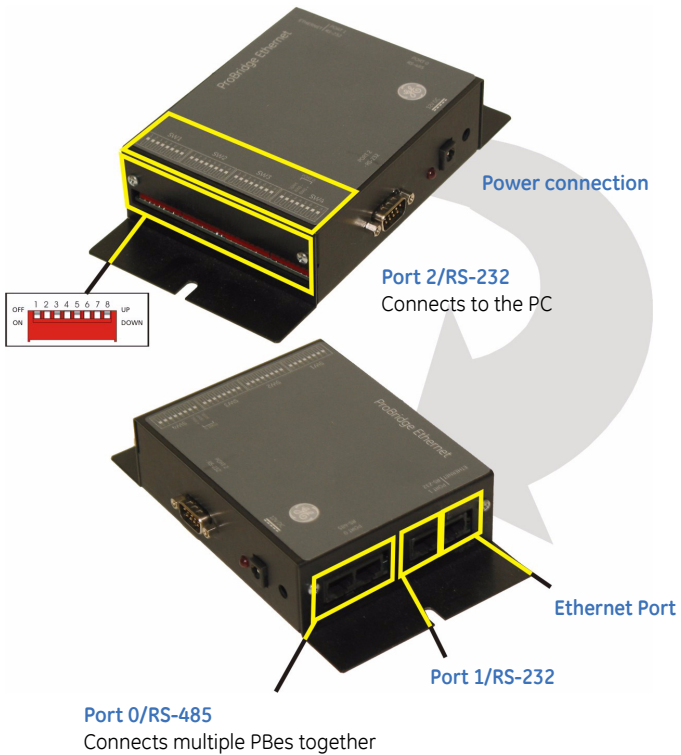
- Voltage: 12 VDC
- Current: 110 mA
- Power: 1.3 watts
- Connector: 2.1 mm female barrel. Center positive.

Installation

Before installation, please familiarize yourself with the PBe and its typical system layout.

PBe components

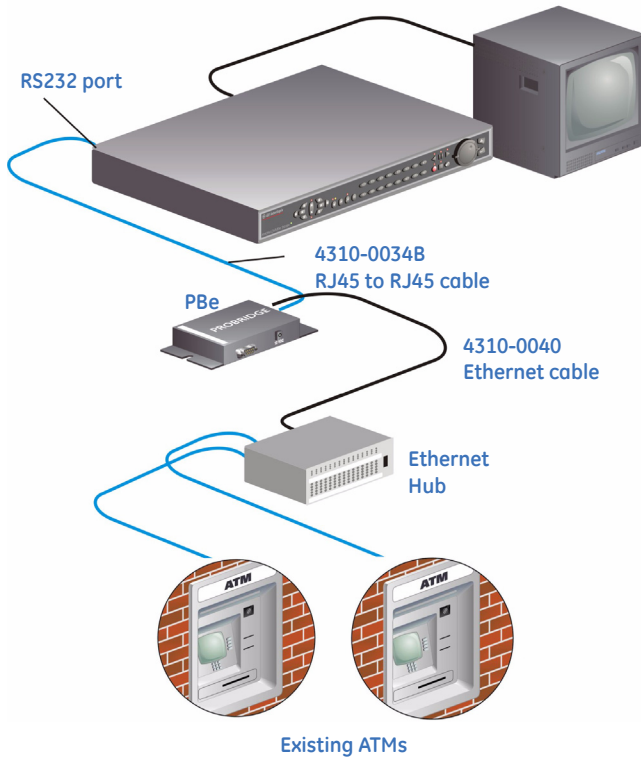
Figure 2. PBe landmarks



Typical system layout

The following figure shows a typical multiple ATM layout.

Figure 3. Multiple ATM system layout



Installation overview

The basic steps required to install the PBe are:

1. Physically connect the PBe interface to the network switch or hub and the DVR using the supplied cables.
2. Program *monitor mode* to **on** by setting SW1 switches 1 to 4. See *SW1 switches 1 to 4* on page 20 for the switch settings.
3. Program the camera number to be associated with the ATM's transaction data to the PBe. See *SW1 switches 5 to 8* on page 21.
4. Program the DVR to record in the way desired for your specific site.

Required information

The following information is required for a successful PBe installation. This information is used to configure the PBe. You will need to contact the customer's ATM network administrator for answers to these questions.

Ethernet device type

- Generic interface
- Native ATM messages (FC)
- Verifone POS
- Ethernet data analyzer

Required DIP switch information

Important switch assignments

Table 1. Important switch assignments

SW1	1-4 Special functions
SW1	5-8 Camera assignment
SW3	1-8 Device type

Default switch settings

Table 2. Default switch settings

SW1		SW2		SW3		SW4	
1	Up	1	Up	1	Up	1	Up
2	Up	2	Up	2	Up	2	Up
3	Up	3	Up	3	Up	3	Up
4	Up	4	Up	4	Up	4	Up
5	Up	5	Up	5	Up	5	Up
6	Up	6	Up	6	Up	6	Up
7	Up	7	Up	7	Up	7	Down
8	Up	8	Up	8	Up	8	Up

Installation steps

1. Select the camera number (1-16) on the DVR on which to associate the ATM transaction text. This is done by

setting switches 5-8 on SW1. See *SW1 switches 5 to 8* on page 21.

2. Connect the PBe to the network switch or hub using the supplied 4310-0040 Ethernet cable.
3. Connect the PBe to the DVR using the supplied 4310-0034 cable. Plug one end into port 1 of the PBe and the other end into the RS-232/2 port of the DVR.
4. Program the DVR for the desired recording functions based upon the presence of transaction text. In addition, make sure the RS-232/2 port is set for a 57600 baud rate. See the DVR manual for more information.
5. Apply power to the PBe using the supplied power supply.

Programming

After you install the PBe, you need to program the ProBridge for operation. This is accomplished by using HyperTerminal or manually setting the DIP switches.

HyperTerminal configuration

You will need the following equipment to program the PBe using HyperTerminal:

- A PC or laptop computer with a COM port and Windows 98/NT/200/XP installed and operational.
- The supplied 4310-0061A PB3 to PC (DB9F to DB9F) cable.

To program the PBe with HyperTerminal, do the following:

1. Remove power and disconnect the PBe from the DVR.
2. Plug the 4310-0061A cable into Port 2 of the PBe and a free COM port on your PC, typically COM1.
3. Launch HyperTerminal, found in
*Start\Programs\Accessories\Communications\
HyperTerminal.*

Figure 4. Laptop connected to PBe

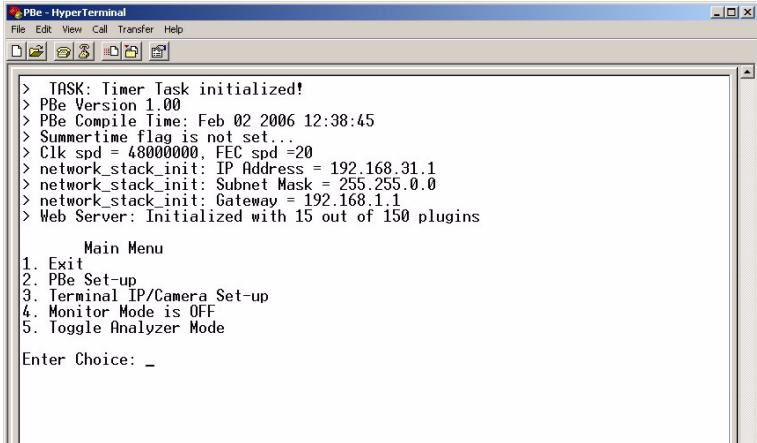


4. The *Connection Description* dialog box will display. Type in a name for this session (PBe) and click **OK**.
5. The *Connect To* dialog box display. Select the COM port you are connected to in the *Connect Using* drop-down list.
6. The *COMx Properties* dialog box will display. Select the following settings to complete the HyperTerminal setup:
 - Bits per second = 57600
 - Data bits = 8
 - Parity = none
 - Stop bits = 1
 - Flow control = none
7. Click **OK**.

To program the PBe do the following:

1. Power up the PBe by plugging in the power supply. The window shown in *Figure 5* will appear confirming that you are in HyperTerminal programming mode.

Figure 5. HyperTerminal programming mode



2. Press the **Enter** key twice to bring up the *Main Menu*.

Figure 6. Main menu

```
Main Menu  
1. Exit  
2. PBe Set-up  
3. Terminal IP/Camera Set-up  
4. Monitor Mode is ON  
5. Toggle Analyzer Mode  
  
Enter Choice:
```

Main Menu

There are five menu selections on the *Main Menu*:

- Exit - Exits the main menu and saves any changes.
- PBe Set-up - provides IP address setup and Ethernet device selection.
- Terminal IP/Camera Set-up - Enables or disables the IP camera and provides addressing options.
- Monitor Mode - Toggles Ethernet monitoring *On* or *Off*.
- Toggle Analyzer Mode - Used for Technical support only.

PBe Set-up menu

Selecting option #2 from the main menu launches the *PBe Set-up menu*.

Figure 7. The PBe Set-up menu

```
Enter Choice: 2
  PBe Set-up
  1. Exit
  2. IP Address: 3.112.55.79
  3. Subnet Mask: 255.255.254.0
  4. Gateway: 3.112.54.1
  5. Ethernet Device: NATIVE ATM MESSAGES (FC)
Enter Choice:
```

We recommend that you do not change the IP addresses from the defaults shown in *Figure 7*. The *Ethernet Device* option is the only option in this menu that you should change. To change the Ethernet device press 5 and then the enter key. The next device on

the list will be selected. The PBe supports the following Ethernet devices:

- Generic interface
- Native ATM messages (FC)
- Verifone POS
- Ethernet data analyzer

Note: The Ethernet device can also be selected by DIP switch. See [SW3 switches 1 to 8](#) on page 22.

Terminal IP/Camera Set-up menu

Selecting option #3 from the main menu launches the *Terminal IP/Camera Set-up menu*.

Figure 8. The terminal IP/camera set-up menu

```
Enter Choice: 3
          Camera/Terminal IP Setup
          1. Main Menu
          2. Camera/Terminal IP
          3. Use IP for Camera: Disabled
Enter Choice: _
```

Option #2 lets you associate cameras to terminals by the camera number and the terminals IP address. To associate a camera to a specific terminal do the following:

1. Press #2 and the enter key to display the camera/terminal list.
2. Enter the camera number that you want and the enter key.
3. Type in the IP address of the terminal to associate to the camera and press the enter key.

4. The camera/terminal will redisplay with the new information.
5. Pressing the enter key will terminate the camera/terminal IP set-up and return you to the previous menu.

Figure 9. The camera/terminal IP table

```

Enter Choice: 2

*** Camera/Terminal IP ***
Camera # 1 = Terminal IP: 0.0.0.0
Camera # 2 = Terminal IP: 0.0.0.0
Camera # 3 = Terminal IP: 0.0.0.0
Camera # 4 = Terminal IP: 0.0.0.0
Camera # 5 = Terminal IP: 0.0.0.0
Camera # 6 = Terminal IP: 0.0.0.0
Camera # 7 = Terminal IP: 0.0.0.0
Camera # 8 = Terminal IP: 0.0.0.0
Camera # 9 = Terminal IP: 0.0.0.0
Camera # 10 = Terminal IP: 0.0.0.0
Camera # 11 = Terminal IP: 0.0.0.0
Camera # 12 = Terminal IP: 0.0.0.0
Camera # 13 = Terminal IP: 0.0.0.0
Camera # 14 = Terminal IP: 0.0.0.0
Camera # 15 = Terminal IP: 0.0.0.0
Camera # 16 = Terminal IP: 0.0.0.0

Enter Camera #: 1
Enter Terminal IP: 3.112.55.80

```

Option #3 lets you enable/disable the *Use IP for Camera* command. When set to **Enabled** the PBe will search the incoming UDP and TCP packets for a match of IP addresses. Depending on the *Device* setting the PBe will parse the data received in that packet and send it to the associated camera number.

The Monitor Mode menu

The fourth selection on the *Main Menu* is the **Monitor Mode** on/off toggle. This selection will toggle between off and on when 4

ins entered followed by the enter key. Changing the selection to on allows the PBe to monitor the incoming Ethernet packets.

Note: Monitor mode should be turned **off** before upgrading the PBe.

In some cases whenever *SW3* is used to select the **Ethernet Device**, monitor mode will automatically be turned on.

Analyzer Mode menu

This menu is used for troubleshooting only. Do not use unless requested by a qualified technician.

Exiting HyperTerminal

To exit HyperTerminal do the following:

1. Enter the number 1 and the enter key until the message “Exiting menus Ready!” is displayed.
2. Close the HyperTerminal screen. You do not need to save the session for your changes to take effect.
1. Remove the RS-232 cable and reconnect the PBe to the DVR.

Manual DIP switch configuration

The *Ethernet Device* and *Camera Selection* can also be selected manually by changing the DIP switch setting see [DIP switch settings](#) on page 20. Follow the steps below to change the DIP switches:

1. Disconnect power from the PBe
2. Disconnect the PBe from the DVR.

3. Set the DIP switches per the tables in *DIP switch settings* on page 20 to match the changes desired.
4. Reconnect the PBe to the DVR.
5. Reapply power to the PBe.

DIP switch settings

This chapter deals in detail with the DIP switch settings. The PBe must be re initialized before any changes to the switch settings will be recognized.

SW1 switches 1 to 4

Switches 1 to 4 on SW1 are for turning *monitor mode* **on** or **off**.

Table 3. SW1 switches 1 to 4 - monitor mode

SW1				
Function	1	2	3	4
Monitor OFF	U	U	U	U
Monitor ON	D	U	U	U

SW1 switches 5 to 8

Switches 5 to 8 on SW1 are for associating a specific camera on the DVR to the PBe.

Table 4. SW1 switches 5 to 8 - Camera number selection

SW1				
Camera number	5	6	7	8
1	U	U	U	U
2	U	U	U	D
3	U	U	D	U
4	U	U	D	D
5	U	D	U	U
6	U	D	U	D
7	U	D	D	U
8	U	D	D	D
9	D	U	U	U
10	D	U	U	D
11	D	U	D	U
12	D	U	D	D
13	D	D	U	U
14	D	D	U	D
15	D	D	D	U
16	D	D	D	D

SW3 switches 1 to 8

The switch positions on SW3 are for selecting the Ethernet device type.

Table 5. SW3 switches 1 to 8 - Device type

SW3								
Switch function	1	2	3	4	5	6	7	8
Ethernet Analyzer	U	U	U	U	U	U	U	U
Generic	U	U	U	U	U	U	U	D
Native ATM	U	U	U	U	U	U	D	U
Verifone POS	U	U	U	U	U	U	D	D

These switches are reserved for technical support. Do not use.

SW4 switches 7 and 8

Switches 7 and 8 on switch 4 control the communication protocol between the PBe at port 1 and the DVR or PC. Normally this is set at RS-232.

Table 6. SW4 switches 7 and 8 - communication protocol

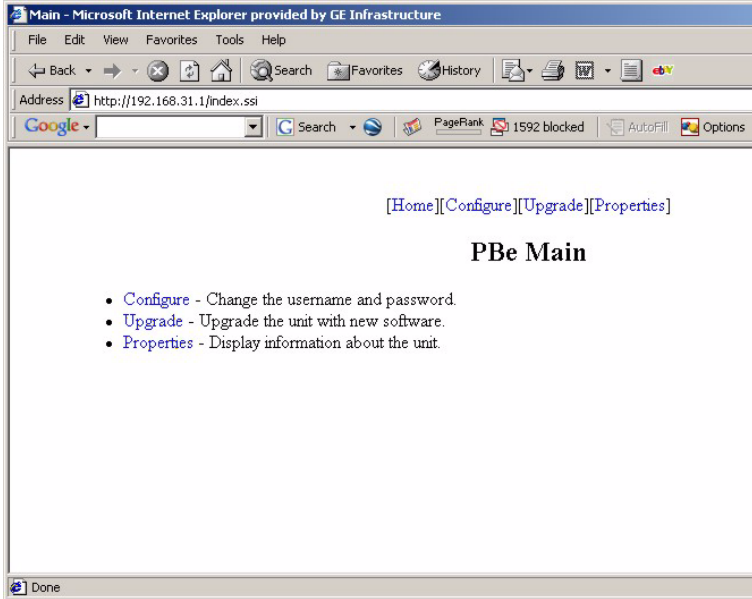
SW4		
Communication protocol	7	8
RS-232	D	U
RS-485	U	D

Accessing the Webserver

The PBe has a built-in webpage for simple configuration changes and remote upgrade. To access the webpage do the following:

1. Obtain the IP addresses for the PBe. The default address are:
 - IP Address: 3.112.55.79
 - Subnet mask: 255.255.254.0
 - Gateway address: 3.112.54.1
2. Connect an Ethernet cable from the Ethernet port on the PBe to a PC or hub.
3. Launch a WebBrowser program like Microsoft Explorer.
4. Enter the IP address of the PBe in the address bar of the browser.
5. The *Enter Password* dialog box will appear. The default log in and password for the PBe are:
 - admin
 - admin
6. Click the OK button and the Webpage will display.

Figure 10. The PBe home page



Click on any of the hyperlinked text to navigate to that feature's page.

Troubleshooting

Use the table below to solve some of the most common problems

Table 7. Troubleshooting table

Problem	Probable cause	Solution
No red LEd	Fuse is bad No Power	Replace fuse Check Power Supply
No text on DVR text box	DVR baud rate incorrect Cable not connected on PBe port #1	Change DVR baud rate to 57600 Check cable connections
Not capturing data from switch	SPAN port not configured to echo data	Consult your IS group leader for this network

Technical specifications

PBe

General

Housing:	Metal enclosure
Dimensions:	4 x 7 x 1.5 in. (100 x 175 x 38 mm)
Weight:	5.2 oz. (161 g)
Color:	Black

Environmental

Operating temperature:	0 to 40° C.
Relative humidity:	10 to 80%. Storage: 10 to 95%

Electrical

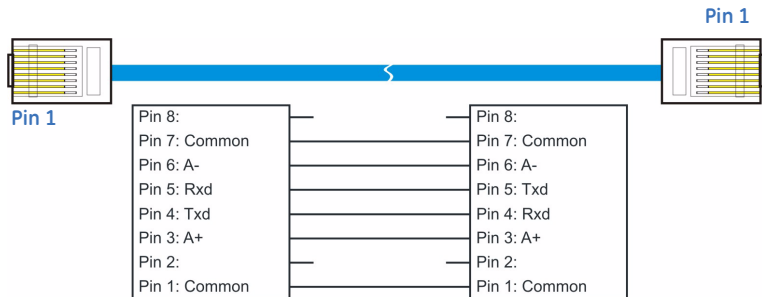
AC power:	Included external power supply
Voltage range:	110 to 240 VAC \pm 10%
Current:	200 mA
DC power:	DC jack, positive center
Power supply voltage:	12 VDC
Current:	110 mA
Power consumption:	1.5 watts max.

Cable Specifications

PBe to DVR

Part number:	4310-0034B
Communication type:	RS-232
Connector type:	RJ45
Length:	5 ft. (1.52 m)

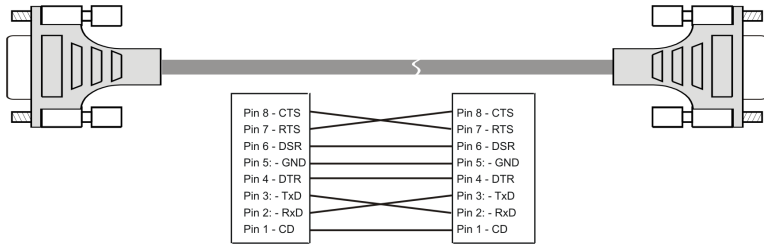
Figure 11. 4310-0034B cable



PBe to PC

Part number:	4310-00061
Communication type:	RS-232/Null Modem
Connector type:	DB9-F, DB9-F
Length:	6 ft. (1.82 m)

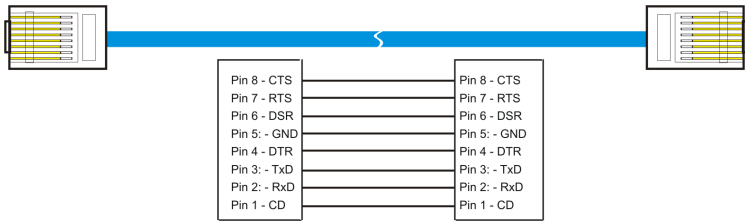
Figure 12. 4310-0061 cable



PBe Ethernet cable

Part number:	4310-0040
Communication type:	Ethernet
Connector type:	RJ45, RJ45
length:	6 ft. (1.83 m)

Figure 13. 4310-0040 PBe Ethernet



Contacting technical support

For assistance installing, operating, maintaining, and troubleshooting this product, refer to this document and any other documentation provided. If you still have questions, you may contact technical support during normal business hours (Monday through Friday, excluding holidays, between 6 a.m. and 5 p.m. Pacific Time).

Table 8. Sales and support contact information

	Sales	Technical support
Phone	Toll-free: 888.GESECURity (888.437.3287 in the US, including Alaska and Hawaii; Puerto Rico; Canada). Outside the toll-free area: 503.885.5700.	
E-mail	info@geseecurity.com	generaltech@ge.com
Fax	800.483.2495	541.752.9096 (24 hours/day)

Note: Be ready at the equipment before calling for technical support.

Online publication library

Another great resource for assistance with your GE product is our online publication library, available to all of our customers. To access the library, go to our website at the following location:

<http://www.geseecurity.com>

In the **Tools** area at the top, click the *Publication Library* link. After you register and log on, you may search through our online library for the documentation you need.¹

1. Many GE documents are provided as PDFs. To read these documents, you will need Adobe Acrobat Reader, which can be downloaded free from Adobe's website at www.adobe.com.